

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

- 1 1. (Cancelled)
- 1 2. (Currently Amended) The device of claim [[1]] 4, wherein the variable orifice valve
2 comprises a sleeve valve.
- 1 3. (Cancelled)
- 1 4. (Currently Amended) ~~The device of claim 1,~~ A device for measuring the flow rate of a
2 fluid in a wellbore, comprising:
3 a variable orifice valve; and
4 a differential pressure measurement mechanism for measuring the pressure loss of the
5 fluid across the variable orifice valve,
6 wherein the variable orifice valve is mounted on a side pocket mandrel.
- 1 5. (Currently Amended) The device of claim [[1]] 4, wherein the differential pressure
2 measurement mechanism comprises:
3 an outer pressure measurement device for measuring the pressure upstream of the
4 variable orifice valve; and
5 an inner pressure measurement device for measuring the pressure downstream of the
6 variable orifice valve.
- 1 6. (Currently Amended) The device of claim [[1]] 4, wherein the differential pressure
2 measurement mechanism comprises a differential pressure measurement device for measuring
3 both the pressure downstream and upstream of the variable orifice valve.

- 1 7. (Currently Amended) The device of claim [[1]] 4, wherein:
2 the variable orifice valve is adapted to allow flow of the fluid from an annulus of the
3 wellbore to the interior of a tubing string disposed in the wellbore; and
4 the differential pressure measurement mechanism measures the pressure of the fluid in
5 the annulus and in the tubing string interior.
- 1 8. (Currently Amended) The device of claim [[1]] 4, wherein the fluid is a ~~singe~~ single
2 phase liquid.
- 1 9. (Currently Amended) The device of claim [[1]] 4, wherein the fluid is a single phase gas.
- 1 10. (Currently Amended) The device of [[1]] 4, wherein the fluid includes a water and an oil
2 content.
- 1 11. (Currently Amended) The device of [[1]] 4, wherein the fluid is a two phase liquid and
2 gas flow.
- 1 12. (Currently Amended) The device of claim [[1]] 4, wherein the fluid a multi phase flow.
- 1 13. (New) A system of measuring flow rate in a wellbore, comprising:
2 a variable orifice valve having plural settings comprising a fully closed setting, a fully
3 open setting, and at least an intermediate setting between the fully closed and fully open settings;
4 a differential pressure measurement mechanism to, during a production stage, measure
5 the flow rate through the variable orifice valve based on a flow coefficient derived for each of
6 the plural settings; and
7 a computer to, during an experimental stage, derive the flow coefficient for each of the
8 plural settings based on measurements of the differential pressure measurement mechanism.
- 1 14. (New) The system of claim 13, wherein the variable orifice valve is mounted on a side
2 pocket mandrel.

- 1 15. (New) The system of claim 13, wherein the computer recalibrates the flow coefficient to
2 account for erosion of the variable orifice valve.